

AP42 Section:	4.2
Title:	Background Document Section 4.2 Industrial Surface Coating  Pre dates 5 <sup>th</sup> edition

## BACKGROUND DOCUMENT

### SECTION 4.2 INDUSTRIAL SURFACE COATING

#### 1.0 INTRODUCTION

The section on Industrial Surface Coating is organized as eight separate sections, as follows:

- 4.2.1 General
- 4.2.2 Coil and Can Coating
- 4.2.3 Magnet Wire Coating
- 4.2.4 Auto and Light-Duty Truck Coating
- 4.2.5 Other Metal Coating
- 4.2.6 Flat Wood Interior Panel Coating
- 4.2.7 Paper Coating
- 4.2.8 Fabric Coating

The section titles correspond to several of the subjects in a series of OAQPS Guideline Documents for the control of volatile organic emissions from existing stationary sources (References 6, 7, 9 and 11-14). These documents were used as primary information sources for the preparation of this section.

#### 2.0 GENERAL SURFACE COATING (Tables 4.2-1 to 4.2-3)

Section 4.2.1 contains no emission factors per se. It does contain information on the densities and volatile organic contents of coatings and formulas for using this information to compute VOC emissions on the assumption that all the VOC in a coating are evaporated. No claims are made for the "representativeness" of these compositional data. They are quoted directly from AP-40, Second ed. (Reference 4), which is assumed to be authoritative and accurate.

### 3.0 COIL AND CAN COATING (Tables 4.2-4 and 4.2-5)

The emissions from can coating that are summarized in Table 4.2-4 of Section 4.2.2 are taken directly from Table 2-2, page 2-15 of Volume II of the EPA's Control of Volatile Organic Emissions From Existing Stationary Sources (References 7).

The data contained in Table 4.2-5 are taken from pages 2-1 and 2-2 of Reference 7. The author of Reference 7 estimated emissions and control efficiencies from data contained in trip reports prepared by EPA personnel V.N. Gallagher and W.L. Johnson. The data presumably represent typical values based on the best engineering judgments of the authors of the reports.

Coil and can coating were considered together because they both involve the industrial surface coating of metal sheets or webs on coating lines that usually consist of roll coaters and drying ovens.

### 4.0 MAGNET WIRE COATING (Table 4.2-6)

The wire coating emissions presented in Table 4.2-6 are taken directly from Table 3-1, page 3-3 of Reference 9. Tons per year were computed from the operating factor of 7,000 hr/yr given in Table 3-1.

### 5.0 AUTOMOBILE AND LIGHT-DUTY TRUCK COATING (Tables 4.2-7 and 4.2-8)

The emissions data presented in Table 4.2-7 of Section 4.2.4 are taken directly from Reference 7, Figure 6.3, page 6-15, and the control efficiencies given in Table 4.2-8 are taken from page 6-1 of Reference 7.

No specific sources for individual data items are given in Reference 7, but nearly all data sources for this document are listed as comments from industry or as trip reports from EPA personnel. Presumably the data in Tables 4.2-7 and 4.2-8 are derived from the industry comments, the EPA trip reports, and the best engineering judgment of the authors of Reference 7.

Auto refinishing/topcoat repair is not included in this section because repair production is intermittent and generally limited to manual spraying with solvent-borne coatings that can be dried at temperatures low enough for the trim to tolerate.

#### 6.0 OTHER METAL COATING (Tables 4.2-9 and 4.2-10)

The emission factors in Table 4.2-9 were computed from information in Reference 11, Table 3-1, Reference 12, Tables 3-3 and 3-4, and Reference 13, Tables 3-3 to 3-9. In each case, the reference gave information about the number of tons of VOC removed by controls and also gave the percentage reduction based on uncontrolled emissions. The tons of uncontrolled VOC were computed from these two data items. The production rates are those given in References 11, 12, and 13 for model plants. No references or other justification are given for the technical parameters listed for these plants, but presumably they represent the best engineering judgment of the authors of References 11, 12, and 13.

Table 4.2-10 is compiled from data taken directly from Reference 11 (page 2-1), Reference 12 (page 2-1), and Reference 13 (page 2-1). No specific documentation is given for any of these data, but, in general, they are based on trip reports and comments from industry.

## 7.0 FLAT WOOD INTERIOR PANEL COATING (Table 4.2-11)

The information in Tables 4.2-11 of Section 4.2.6 is taken directly from page 2-4 of Volume VII of the series cited above (Reference 14), which, in turn, is based on information supplied by industry.

## 8.0 PAPER COATING (Tables 4.2-12 and 4.2-13)

The information in Table 4.2-12 of Section 4.2.7 is based on the premise of mass balance, and the information in Table 4.2-13 is taken directly from page 5-1 of Reference 7. The primary sources for these data are not given in Reference 7.

## 9.0 FABRIC COATING (Table 4.2-14)

The information in Table 4.2-14 of Section 4.2.8 is based on the premise of mass balance. No estimates of emissions from fabric coating lines were presented in the reference documents on which this section is based (i.e., References 7 and 15; the latter consists of one chapter of EPA's "Environmental Aspects of Chemical Use In Printing Operations").